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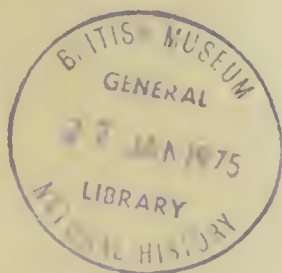
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GOWANS'S NATURE BOOKS, No. 20



ALPINE PLANTS AT HOME

FIRST SERIES

ALPINE PLANTS AT HOME

FIRST SERIES

*Sixty photographs of Alpine Plants growing in their haunts,
by Somerville Hastings, F.R.C.S.*

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THE object of this little book is to enable those unacquainted with Botany to recognise some of the common but charming flowers so abundant in Switzerland. All the photographs in the following pages were taken during the months of June and July in the Bernese Alps and the immediate neighbourhood. The Latin nomenclature and order adopted are those of Gremlin's "Flora of Switzerland," 1889 Edition. The German names have been supplied by Herr Andreas Voss, editor of "Salomon's Wörterbuch der Deutschen Pflanzennamen," to whom the Publishers beg to express their thanks. For the French names M. Ch. Flahault has been followed in most cases.



ANÉMONE DES ALPES
(Fleur blanche)

ALPEN-WINDRÖSCHEN
(Blüte weiss)

ALPINE ANEMONE
(Flower white)



YELLOW ANEMONE
(Flower yellow)

ANÉMONE A FLEURS JAUNES
(Fleur jaune)

SCHWEFELGELBES ALPEN-WINDRÖSCHEN
(Blüte gelb)



SPRING ANEMONE
(Flower white within,
purple without)

ANÉMONE PRINTANIÈRE
(Fleur blanche en dedans,
violette à l'extérieur)

FRÜHLINGS-KUHSCHELLE
(Blüte innen weiss, aussen violett)



RANONCULE DES PYRÉNÉES
(Fleur blanche)

PYRENÄEN-HAHNENFUSS
(Blüte weiss)

PYRENEAN CROWFOOT
(Flower white)



ACONITE-LEAVED CROWFOOT
(Flower white)

RENONCULE A FEUILLES D'ACONIT
(Fleur blanche)

SILBER-HAHNENFUSS
(Blüte weiss)



RENONCULE ALPESTRE
(Fleur blanche)

ALPEN-HAHNENGUSS
(Blüte weiss)

ALPINE CROWFOOT
(Flower white)



GLOBE FLOWER
(Flower pale yellow)

ECHTE TROLLBLUME
(Blüte blassgelb)

BOULE D'OR
(Fleur jaune pâle)



TWO-FLOWERED VIOLET
(Flower yellow,
streaked with brown)

VIOLETTE A DEUX FLEURS
(Fleur jaune,
striée de brun)

ZWILLINGS-VEICHEN
(Blüte gelb, mit Braun gestreift)



LONG-SPURRED PANSY

(Flower violet, sometimes yellow)

LANGSPORN-VEILCHEN

(Blüte violett, bisweilen gelb)

VIOLETTE ÉPERONNÉE

(Fleur violette, parfois jaune)



WOOD-PINK
(Flower pink)

STEIN-NELKE
(Blüte rosa)

CEILLET DES FORÊTS
(Fleur rose)



MOSS CAMPION
(Flower pink)

MOOS-LEINKRAUT
(Blüte rosa)

SILÈNE SANS TIGE
(Fleur rose)



WOOD CRANE'S-BILL
(Flower violet)

GÉRANIUM DES FORÊTS
(Fleur violette)

WALD-STORCHSCHNABEL
(Blüte violett)



ALPINE CLOVER
(Flower pink)

TRÈFLE DES ALPES, RÉGLISSE DES ALPES
(Fleur rose)

* ALPEN-KLEE
(Blüte rosa)



COLD MILK-VETCH
(Flower yellow)

PHAQUE FROIDE
(Fleur jaune)

EINFACHE GLETSCHERLINSE
(Blüte gelb)



WHITE DRYAS
(Flower white)

DRYADE A HUIT PÉTALES
(Fleur blanche)

ECHTE SILBERWURZ
(Blüte weiss)

SIEVERSIA MONTANA, SPRGL.
[*GEUM MONTANUM*, L.]

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LESCHIE DES MONTAGNES
(Fleur jaune)

BERG-NEIKENWURZ
(Blüte gelb)

MOUNTAIN AVENS
(Flower yellow)



COBWEB HOUSE-LEEK
(Flower red)

JOUBARBE TOILE D'ARAIGNÉE
(Fleur rouge)

SPINNEN-HAUSWURZ
(Blüte rot)



MOUNTAIN HOUSE-LEEK
(Flower purplish red)

JOUBAREF DES MONTAGNES
(Fleur rouge pourpre)

BERG-HAUSWURZ
(Blüte purpurroth)



PURPLE SAXIFRAGE
(Flower purple)

SAXIFRAGE A FEUILLES OPPOSÉES
(fleur pourpre)

BUNTER STEINBRECH
(Blüte purpur)



WHITE MOUNTAIN-SAXIFRAGE
(Flower yellowish-white)

SAXIFRAGE TOUJOURS VERTE
(Fleur blanc jaunâtre)

TRAUBEN-STEINBRECH
(Blüte gelbweiss)



YELLOW MOUNTAIN-SAXIFRAGE
(Flower yellow, with red dots)

SAXIFRAGE PAIN D'OISEAU
(Fleur jaune à points rouges)

H. G. TENN. SCHEIDT



ROUGH SAXIFRAGE
(Flower yellowish white)

RAUCHER SIFENDRE H
(Blüte gelb weiss)

SAXIFRAGE CHIFF
(Fleur blanc jaunâtre)



FURROWED SAXIFRAGE
SAXIFRAGA EXARATA



LARGE ASTRANTIA
(Flower white or pink)

GRANDE ASTRANCE, RADIAIRE
(Fleur blanche ou rose)

GROSSE STERNDOLDE
(Blüte weiss oder rosa)



ALPINE COLTSFOOT
(Flower reddish)

TUSSILAGE DES ALPES
(Fleur rougeâtre)

ALPEN-BRANDLATTICH
(Blüte rötlich)



MOUNTAIN EVERLASTING OR CAT'S-FOOT

(Flower white or pink)

PIED DE CHAT

(Fleur blanche ou rose)

ECHTES KATZENPFÖTCHEN

(Blüte weiss oder rosa)



MUSK MIL-FOIL
(Flower white)

BISAM-GARBE
(Blüte weiss)

ACHILLÉE MUSQUÉE
(Fl. w.)



GLACIAL ARONIC
(Flower yellow)

ARONIQUE GLACIALE
(Fleur jaune)

GLETSCHER-GEMSWURZ
(Blüte gelb)



ARNICA
(Flower yellow)

ECHTES WOHLVERLEI
(Blüte gelb)

ARNICA
(Fleur jaune)



SPIKED RAMPION
(Flower dirty white)

LANGE TEUFFELSKRAULE
(Blüte schmutzweiss)

RAMPONCE EN ÉPI
(Fleur blanc sale)



SCHUCHZER'S BELL-FLOWER
(Flower blue)

CAMPANULE DE SCHEUCHZER
(Fleur bleue)

SCHILANKE TEUFELSKRALLE
(Blüte blau)



AIRIEL F. ROUGE, CANCHE
(Fleur rose)

RED-WORTLEBERRY, COWBERRY
(Flower pink)

PRESELE, HEDERIFFRE
(Blue rose)



HAIRY ALPENROSE
(Flower red)

RHODODENDRON HÉRISSE
(Fleur rouge)
WIMPERN-ALPENROSE
(Blüte rot)



RHODODÉNDRON FERRUGINEUM

(Fleur rouge, pale)

RUSTY-LEAVED ALPENROSE

(Blüte blasse-rot)

RUSTY-LEAVED ALPENROSE

(Flower pale red)



YELLOW GENTIAN
(Flower yellow)

GELBER ENZIAN
(Blüte gelb)

GENTIANE JAUNE
(Fleur jaune)



GENTIANE A TIGE COURTE
(Fleur bleue)

ERD-ENZIAN
(Blüte blau)

STEMLESS GENTIAN
(Flower blue)



SHORT-LEAVED GENTIAN
(Flower blue)

GENTIANE A FEUILLES COURTES
(Fleur bleue)
ETFORMIGER ENZIAN
(Blüte blau)



MYOSOTIS DES ALPES
(Fleur bleue)

ALPEN-VERGISSMICHT
(Blüte blau)

ALPINE FORGET-ME-NOT
(Flower blue)



ALPINE TOADFLAX

ALPEN-LEINKRAUT

LINAIRE DES ALPES



ROCK-SPEEDWELL.
(Flower blue)

STEIN-EHRENFREIS
(Blüte blau)

VERONIQUE DES ROCHERS
(Fleur bleue)



WHORLED LOUSEWORT
(Flower purplish red)

PÉDICULAIRE VERTICILLÉE
(Fleur rouge pourpre)

QUIRL-LÄUSEKRAUT
(Blüte purpurroth)



DUIT. RED LOUSEWORT
(Flower reddish-brown)

PÉDICULAIRE À BFC TRONQUÉ
(Fleur brun rouge)

GFSTUTZTES LÄUSEKRAUT
(Blüte braunroth)



TUBEROUS LOUSEWORT
(Flower yellow)

PÉDICULAIRE TUBÉREUSE
(Fleur jaune)

KNOLLEN-LÄUSEKRAUT
(Blüte gelb)



LEAFY LOUSEWORT
(Flower yellow)

PÉDICULAIRE FEUILLÉE
(Fleur jaune)

BLATTREICHES LÄUSEKRAUT
(Blüte gelb)



YELLOW LOUSEWORT
(Flower yellow, with blackish
red spot)

BUNTES LÄUSEKRAUT
(Blüte gelb, mit schwarzrothen Fleck)

PÉDICULAIRE BARIOLÉE
(Fleur jaune, avec tache
rouge noirâtre)



ALPINE BARTSIA
(Flower violet)

ECHTER ALPENHELM
(Blüte violett)

BARTSIE DES ALPES
(Fleur violette)



ALPINE BUTTERWORT
(Flower white)

WEISSES FETTKRAUT
(Blüte weiss)

GRASSETTE DES ALPES
(Fleur blanche)



COMMON BUTTERWORT
(Flower violet)

BLAUES FETTKRAUT
(Blüte violett)

GRASSETTE COMMUNE
(Fleur violette)



BIRD'S-EVE OR MEALY PRIMROSE
(Flower pink)

MEHL-PRIMEL
(Blüte rosa)

PRIMEVÈRE FARINEUSE
(Fleur rose)



PRIMEVÈRE VISQUEUSE
(Fleur rose)

KLEB-PRINDEL
(Blüte rosa)

VISCOUS PRIMROSE
(Flower pink)



ALPINE SNOWBELL
(Flower violet)

SOLDANELLE DES ALPES
(Fleur violette)

ALPEN-TRODDERBLUME



DWARF SNOWBELL
(Flower violet)

SOLDANELLE DÉLICATE
(Fleur violette)

ZWERG TROLL
(Blüte violett)



HEART-LEAVED GLOBULARIA
(Flower pale blue)

GLOBULAIRE A FEUILLES EN CŒUR
(Fleur bleu pâle)
HERZ-KUGELBLUME



SAULE RÉTICULÉ
(Fleurs en épis rougeâtres)

RETICULATED WILLOW
(Flowers in reddish catkins)

NETZ WEIDE
(Blüten in rötlichen Käuzchen)



SMALL WHITE BUTTERFLY ORCHIS COELOGLOSSE BLANCHÂTRE
(Flower white) (Fleur blanche)
WEISSE HÖSWURZ
(Blüte weiss)



SPRING, CROCUS GARTEN-SAFRAN SAFRAN PRINTANIER
(Flower purple or white) (Blau purpur oder weiss) (Fleur pourpre ou blanche)

SMILACINA BIFOLIA, DESF.
[*MAIANTHEMUM BIFOLIUM*, SCHMIDT]



MAIANTHEME A DEUX FEUILLES
(Fleur blanche)

SCHATTEN-MAITRÄUCHCHEN

MAY LILY
(Flower white)



ALPINE LILY
(Flower white)

ECHTE TRICHTERLILIE
(Blüte weiss)

PARADISIE-LIS
(Fleur blanche)



WHITE VERATRUM
(Flower whitish)

HELLÉBORE BLANC, VÉRAIRE BLANC
(Fleur blanchâtre)

WEISSER GERMER
(Blüte weisslich)

Some Notes on the Plants

OF WHICH

PHOTOGRAPHS APPEAR IN
THE PRECEDING PAGES . .

BY

SOMERVILLE HASTINGS.

No one can visit Switzerland for the first time without being struck by the singular beauty of its wild flowers. In early summer before the hay is cut the whole country from the lowland meadows to the snow line itself is ablaze with beauty. The abundance of the flowers, as well as their bright colours, makes the Alpine flora so striking. At the same time it must be remembered that though so numerous neither the flowers themselves nor the plants which bear them are really larger than their lowland relatives. Indeed, in spite of their bright conspicuous flowers, the plants growing at higher altitudes are generally stunted and dwarfed.

Many of the peculiarities of Alpine plants can be accounted for by the conditions under which they live. During at least half of the year, owing to the white coverlet of snow, all activity in the Alpine plant world ceases, so that the production of flowers and seeds, indeed all the vital processes of Alpine plants, must be crowded into the few months when the ground is free from snow. Crocuses and Snowbells (Pages 61, 36, and 57) and other plants are found blooming at the very edge of the snow, so that everything must be ready for immediate flower production directly the snow melts. For this to take place a reserve store of nourishment is essential, and accordingly Alpine plants are furnished with thick underground stems or fleshy roots where food substances can be stored. It is also noteworthy that the number of plants which go through their life cycle in a single year (annuals, as they are called) is in the Alps comparatively small. The reason for this is perhaps to be found in the fact that a single wet summer, by interfering with the ripening of the seeds, might threaten with extinction an entire species. Moreover, annuals have but little food stored up for a sudden outburst of activity on the approach of spring, nor can the tiny root of a budding seedling obtain from the soil all that is necessary for the rapid production of flowers and seeds.

As has been previously mentioned, Alpine plants are as a rule short-stemmed and dwarfed, the vegetative part of the plant being often merely represented by a wreath of leaves. This is also probably the result of external conditions, the bright sunlight by day and intense cold at night having a retarding effect on the growth of the stem. The opposite result as regards light is seen in the long lanky shoots sent out by a potato sprouting in a dark cellar.

The danger of being dried up by sun and wind is one of the greatest of the risks to which Alpine plants are subjected. This danger is guarded against in a variety of ways. In the first place, the low stature of so many Alpine plants makes the effect of wind much less felt. The crowding together of some into cushion-like masses and the close set rosette-like arrangement of the leaves of others have a similar result. The great development of bairs, as in the familiar Edelweiss, and the succulent character of the leaves, as in the House-leeks (Pages 23 and 24), also prevent rapid drying up. Further, the extensive development of underground stems and roots so characteristic of many Alpine plants must provide an extensive area for both the absorption of water and its storage.

But it is in connection with their flowers that the wonderful adaption of Alpine plants to their surroundings is perhaps best seen. These plants have flowers which are usually more numerous and of brighter colours than those of their relatives on the plains. They have generally more honey also. Further, yellow flowers are less numerous, and pink and blue flowers more abundant in Alpine regions than in lowland districts. This also requires explanation. As is well known, one of the principal objects of the life of plants is to arrange for the conveyance of pollen from the stamens of one flower to the seed-producing apparatus of another. This is sometimes done by the wind, but much pollen is lost, so that this is manifestly a very wasteful method. Plants have therefore adopted the more economical plan of getting insect visitors to do this carrying business for them. Honey is provided to attract the insects to the flower, which is usually of some bright distinctive colour. As the total number of insect visitors is probably less in the Alps than on the plains greater attractions in the form of brighter flowers and more abundant honey have to be provided. But not only is the total number of insect visitors less in the Alps than in lowland districts, but the relative proportions of the several varieties is very different also. Thus there are comparatively few flies, bees, and wasps, but numerous bumble bees, butterflies, and moths in the higher regions. The latter have longer tongues, and prefer to visit flowers where the honey cannot be reached by shorter tongued insects. Flowers of this sort with less easily reached honey are more often of a red or blue colour and rarely of a yellow tint. In this way the brilliant colour of so many Alpine flowers is at any rate in part accounted for.

The extreme effort made by many Alpine plants to attract insect visitors is well seen in such flowers as the Stemless Gentian and Long-spurred Violet (Pages 41 and 14), where the one or two flowers are as large as all the rest of the plant put together. After flowering the bright blue corolla of the Stemless Gentian (Page 41) shrivels up, and surrounds the seed vessel, at the same time changing its colour to green, and presumably taking on a vegetative function. It would seem as though the production of such a large corolla for attractive purposes had been too much for the little plant and that, after pollination, it was compelled to make use of it for vegetative purposes.

Several varieties of Anemone (frontispiece, Pages 6, 7 and 8), are common in Switzerland, and are for the most part very beautiful flowers.

The Alpine Anemone (Page 6) is one of the loveliest of Alpine plants. The flower is snow white with a tinge of blue on its outer surface, especially in the bud. After the petals are shed the seeds develop long feathery appendages, no doubt to assist in their dispersion by the wind, and even in late summer when the flowers themselves are scarce, these "Chamois' beards," as they are called, may still be found. Except in colour, the Yellow Anemone (Page 7) closely resembles the above, indeed there is some doubt whether it ought really to be regarded as a separate species. The Spring Anemone (Page 8) comes up directly the snow is melted. The long hair covering the outside of its flowers with a furry coat seems most appropriate to the situation where it grows. Though really a spring flower it may be found well on in summer close to the snow line. The Narcissus-flowered Anemone (frontispiece) differs from those previously described in that its seeds do not develop feathery tufts.

The Crowfoots (Pages 9, 10, 11) are distinguished from the Anemones by possessing two distinct varieties of floral leaves, green sepals and coloured petals, the Anemones having one kind only.

The Pyrenean Crowfoot (Page 9) is recognised by its grass-like bluish-green leaves. The Aconite-leaved Crowfoot (Page 10) is a large plant with a much branched stem. It is common in moist places. All its leaves are divided by deep fissures reaching almost to the stem. Closely resembling this species is *Ranunculus platentifolius*, but it is not such a large plant and its upper leaves are hardly at all divided. The Alpine Crowfoot (Page 11) has dark green kidney-shaped leaves with serrated edges.

The beautiful Globe Flower (Page 12), though very abundant on the Alps, is not exclusively Alpine, being found also in mountain pastures all over Europe. It is not unlike a buttercup, but is distinguished by the fact that its globe-shaped flowers never fully open.

On page 13 is seen a very characteristic group of the Two-flowered Violet, growing, as it so often does, in a moist spot at the base of a rock. The bright yellow flowers, streaked with brown, and the kidney-shaped leaves are its distinctive features.

The Long-spurred Pansy (Page 14) bears a single large and beautiful flower, and is common in rocky places at high altitudes. It is recognised by its long spur which is as long as the corolla and by its notched leaves.

The Wood-Pink (Page 15) grows in dense tufts from the crevices of rocks.

The Moss Campion (Page 16) is a good example of the Cushion plants so characteristic of Alpine regions. The individual plants are closely huddled together in the form of a tuft, not only on account of warmth and mutual protection, but also because the dense felt-like cushion acts as a sort of reservoir or sponge, and prevents the little plants being dried up by the fierce rays of the sun. *Silene acaulis* closely resembles the above, but its flowers are smaller and less brightly coloured, and its seed vessel or capsule is hardly longer than the remains of the sepals which enclose it. The capsule of the Moss Campion projects well beyond the encircling calyx leaves.

The **Wood Crane's-bill** (Page 17) is a frequent inhabitant of Alpine meadows. Both stem and flowers are erect, and the finely divided leaves are placed opposite to one another on the stem. The violet-red petals and yellow stamens will also assist in its recognition.

The beautiful **Alpine Clover** (Page 18) is widely distributed in the Alps. It is easily recognised by its long stalked flower-heads composed of three to eight large red flowers. Its leaves are made up of three pointed leaflets.

The light green stipules, which embrace the bases of the opposite leaves of the **Cold Milk-Vetch** (Page 19), should be carefully noted. The **Alpine Mountain-lentil** (*Phaca Alpina*), which is not unlike this plant, has darker yellow flowers, and its leaves are made up of more numerous leaflets.

The **White Dryas** (Page 20) is not unlike an *Anemone* at first sight, more especially as the seeds develop long feathery appendages after the petals are shed. But the tough leathery leaves, with their edges rolled back, are quite different from the finely divided leaves of the *Anemones*.

The **Mountain Avens** (Page 21) is another plant with long feathery seeds. The **Creeping Avens** (*Sieversia reptans*), which is very like it, has rather larger flowers, and, unlike the *Mountain Avens*, sends out long creeping runners in all directions over the ground.

The **House-leeks** are fairly abundant in the Alps. Two of the commonest are here illustrated. The **Cobweb House-leek** (Page 22) is at once recognised by its rosettes of leaves bound together on top by long hairs, like a spider's web. The **Mountain House-leek** (Page 23), which is common in dry places among rocks, has open rosettes of leaves and very short hairs.

The **Saxifrages** have been extremely successful in the Alps, and form a very characteristic part of the Alpine flora. The pretty little **Purple Saxifrage** (Page 24) is really a cushion plant. With its regularly arranged opposite leaves and rose-red, or later violet, flowers it makes a charming picture. The **White Mountain-Saxifrage** (Page 25) has a rosette of leaves like a *House-leek* at its base. The leaves are, however, serrated, and have chalky scales on their margins; the flowers too are quite different from those of a *House-leek*. The **Yellow Mountain-Saxifrage** (Page 26) is common by the side of mountain torrents, especially near the foot of a glacier. The narrow somewhat fleshy leaves, yellow petals alternating with and scarcely longer than the sepals and broad disc, are among the characteristic features. The **Rough Saxifrage** is seen on Page 27. The **Mosslike Saxifrage** (*Saxifraga bryoides*), which resembles this plant, is smaller and grows in more compact masses. The **Furrowed Saxifrage** (Page 28) is found in rocky places. The three to five furrows on its leaves are perhaps its most strongly-marked characteristic.

The **Large Astrantia** (Page 29) is common in Alpine meadows and on the borders of woods. The **Small Astrantia** (*Astrantia minor*) is a much more slender plant with smaller flower-heads and more finely divided leaves.

The Alpine Coltsfoot (Page 30) will be recognised by the photo. It is a very common plant in Alpine pastures.

The Mountain Everlasting, or Cat's-foot (Page 31), has soft, woolly leaves like the Edelweiss. It is common on dry heaths. The Carpathian Cudweed (*Antennaria carpathica*), which is rather like it, has brown instead of pink or white flower-heads.

The Musk Milfoil is illustrated on page 32. It has an aromatic smell especially if rubbed, and is used for the preparation of a sort of herb beer called "Iva." The Black Milfoil (*Achillea atrata*) closely resembles this plant, but its leaves have no spots on them, and it is without aromatic scent.

The Glacial Aronic (Page 33) and the Arnica (Page 34) are not unlike at first sight. The Arnica is at once distinguished from all similar plants by the pair of opposite leaves which embrace its flower-stem. The Aronic is more difficult to recognise, but apart from technicalities perhaps the firm fleshy leaves and hollow stem are the most useful guides.

The Spiked Rampion (Page 35) is very abundant in thickets and woods. Its elongated flower-heads of greenish-white flowers and heart-shaped leaves should make its identification an easy matter.

Scheuchzer's Bell-Flower (Page 36) is one of the commonest of the bluebells so abundant in Alpine meadows. It grows in small tufts, its flowers are large and both flowers and flower-buds hang down. These points help to distinguish it from other species which are very similar.

The Red-Whortleberry, or Cowberry, is photographed on page 37. It is common in woods and on moors, and bears red berries. The leaves are evergreen and leathery with rolled back margins and brownish spots on their under surfaces.

The two species of the Alpenrose so characteristic of Switzerland are illustrated on pages 38 and 39. The hairy-leaved variety has bright green leaves with long hairs at the margins and occasional brown spots on the under surface. The rusty-leaved Alpenrose has rather larger and more darkly coloured flowers. Its leaves are entirely without hairs, and have turned over margins. They are of a deep green colour above and a rusty-red felt covers the whole of their under surface.

The Gentians are abundant on the Alps. The Yellow Gentian (Page 40) is a large and conspicuous plant. It is common in Alpine meadows and pastures, and is often three or four feet in height. Its long root is used in medicine, and preparations of it form the Gentian-bitter used especially for indigestion. The bright yellow corolla is usually covered with fine brownish-purple spots, and if these are numerous the Yellow Gentian may closely resemble the spotted *Gentiana punctata*. The fact that the corolla is divided into segments right down to the base in the former, but only notched at its free border in the latter will prevent any mistake arising. The Stemless Gentian (Page 41) bears a single large flower of a deep azure blue. It is fairly common in mountain pastures. It is often quite a difficult matter to distinguish between

the Carved Gentian (*Gentiana excisa*) and this species, not only because they are so much alike, but also because it is probable that intermediate forms exist. The principal distinctions are that the sepals of the Carved Gentian are constricted a little above their bases and its leaves are broader, softer, and less pointed. The smaller Gentians are difficult to recognise also. The Short-leaved Gentian (Page 42), for example, is more like the Spring Gentian (*Gentiana verna*) than any other. But this plant has usually narrower and more pointed leaves, and its sepals are more definitely winged than those of the Short-leaved variety.

The Alpine Forget-me-not (Page 43) is a beautiful little plant. It is common in meadows and pastures, and is probably to be regarded as only an Alpine form of the Wood Forget-me-not (*Myosotis sylvatica*) found in the mountain woods of Central Europe. As is often so noticeable in the Alpine flora, the number of blossoms borne by a single small plant is almost incredible.

The Alpine Toadflax (Page 44) is a pretty little creeping plant abundant among rocky débris. The violet corolla has nearly always an orange spot, which is probably intended to act as a sort of guide-post to show insects the way to the honey contained in the long spur.

The Rock-Speedwell (Page 45) is recognised by its bright blue flowers with a crimson ring in the centre. This is also perhaps designed to indicate to insect visitors the situation in which honey may be found.

Many species of Lousewort are common in the Alps. The Whorled Lousewort (Page 46) is at once recognised from all the others by its brilliant red flowers and by the fact that its leaves are arranged in rings or whorls of three or four round the stem. It grows in moist grassy places. Perhaps the Dull Red Lousewort (Page 47) most nearly resembles it, but the flowers of this plant are of a much darker and almost blackish red colour and have no beak. The leaves are not arranged in whorls. The Tuberous Lousewort (Page 48) is distinguished by its large pale yellow flowers with long beaks and by its thick almost tuberous root. The Leafy Lousewort (Page 49) has also yellow flowers, but there is no beak, and the upper lip of the corolla is woolly. It is a tall leafy plant common in rocky pastures. The Yellow Lousewort (Page 50) is found in mountain pastures with poor soil in the northern Alps. Its bright yellow flower has no beak. A dark red spot near the apex of the upper lip of the corolla is its distinguishing feature.

The Alpine Bartsia (Page 51) is very common in Alpine pastures, and will be easily recognised. The upper leaves are tinged with violet and both stem and anthers are woolly.

The Common (Page 53) and Alpine (Page 52) Butterworts very closely resemble one another except in the colour of their flowers. Both are common in boggy places and on wet rocks. On the upper surface of their leaves a sticky viscid secretion is poured out. Small flies and other insects get caught on this and the products derived from their digestion nourish the plant.

The Bird's-eye or Mealy Primrose (Page 54) is one of the commonest as well as one of the prettiest of Alpine plants. It is

recognised by the powdery wax, easily rubbed off, on the under surface of the leaves, and by the fact that the leaves are rolled back upon themselves when young. The corolla-tube is a little more than twice as long as the calyx. The Viscous Primrose (Page 55) growing in rocky places is not so easy to recognise. Its leaves have glandular hairs on both sides, and its flowers are borne by a short stalk.

The Snowbells (Pages 56 and 57) come up wherever the snow is melting, and are common on the sides of avalanche tracks as well as near the snow line. There are three Alpine species, two of which are here illustrated. The deeply incised corolla and long style of the Alpine Snowbell are distinctly seen in the photograph. The Dwarf Snowbell (Page 57) has smaller leaves, a much less deeply divided corolla, and a short style which does not project beyond the corolla. *Soldanella minima* resembles the last, but has smaller round, not heart shaped, leaves, and its corolla is streaked with purple on the inner side.

The Heart-leaved Globularia (Page 58) is rather like a Rampion at first sight. It is a small creeping plant often met with in Alpine pastures. The blunt-pointed leaves are thick and leathery.

The Reticulated Willow (Page 59) is a much branched low-growing or creeping shrub common in rocky places. The leaves are characteristic. They are thick and leathery with rolled back margins. The branched veins are seen as depressions on the dark green upper surface of the leaves and as well marked ridges on the paler under surface.

There are a good many Orchids to be found in the Alps, especially in the limestone districts. The Small White Butterfly Orchis (Page 60) is an inconspicuous little plant common in upland pastures.

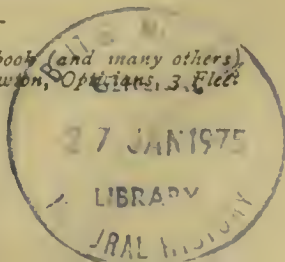
Directly the snow melts up come the Spring Crocuses (Page 61) in great profusion, and even well on in summer large numbers of this plant are found beside the slowly melting snow brought down by avalanches.

The beautiful May Lily (Page 62) is frequently found in woods. It is by no means exclusively Alpine.

The Alpine Lily (Page 63) is a large and handsome plant. It grows in Alpine meadows, but is not very common. It is not likely to be mistaken for any other plant.

The White Veratrum (Page 64) is a tall herb with large parallel-veined leaves, very common in damp meadows and pastures. *Veratrum nigrum* is a very similar plant, but its flowers are brown instead of pale greenish yellow. The White Veratrum is intensely poisonous.

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